

HEAR FROM PROFESSIONALS. LEARN FROM EXPERIENCE.



INFORMATION TECHNOLOGY

Information Technology careers involve the design, development, support, and management of hardware, software, multimedia, and systems integration services. The IT industry is a dynamic and entrepreneurial working environment that has a revolutionary impact on the economy and society.



Learning that works
for Nebraska

WHAT TO EXPECT IN THIS GUIDE



INTERVIEWS

Each video contains interviews with employees and business representatives discussing work requirements, education levels, salary and job prospects.



TOURS

Experience virtual industry tours that provide a unique opportunity to get a glimpse inside Nebraska-based companies without leaving your home or classroom.



INFORMATION

Throughout the videos you will find valuable information regarding job markets, salaries, and educational requirements to help you identify a possible career path.

NOTE TO INSTRUCTOR:

These are suggested activities and questions to accompany the virtual industry tour. Each component may be used individually or modified to fit the needs of the classroom. Use these websites for more information on this career cluster:

- www.education.ne.gov/nce/career-clusters
- <https://www.education.ne.gov/nce/careerdevelopment/>
- [Nebraska H3 Reports](#)
- www.nebraskacareerconnections.org

In addition, NEworks has an array of resources, including Nebraska Workforce Trends magazine, Labor Market Regional Reviews, Occupational Profiles, and Career Ladder Posters, available at <https://neworks.nebraska.gov> under Labor Market Information>Additional Services>Publications.

ANTICIPATORY SET:



Guide the students to think about the importance of the information technology career cluster.

“Take a few moments to think about your day thus far including everything from the time you woke up to right now while you are sitting in this classroom.”

“You have 2 minutes to list everything on a sheet of paper. Questions? Get started!”

After time is called, ask students to share their lists with a partner or small group.

“Let’s take another look at your lists individually. You have 45 seconds to read your list silently and circle any steps that would not have been possible without technology. Questions?”

After time is called, ask students to share a couple of circled steps/ tasks aloud with the class.

INTRODUCTORY QUESTIONS:



“Raise your hand if you have sent an email today? Raise your hand if you watched TV today? Raise your hand if you sent a text message today before coming to class? As you can see, our lives are filled with technology. Today we are going to explore the Information Technology career cluster.”

Ask these questions to students; can be given as journal questions or asked aloud. If asking aloud, consider having the students share with a partner first, then calling on students to share aloud. Responses will vary. Remember that these responses are based on the students’ knowledge prior to watching the virtual tour.

When you think of information technology, what types of jobs come to mind? Are these jobs that YOU might be interested in?

CONTENT:



“Today we will watch a video that highlights three different businesses in this area. Each business will describe their involvement in the industry, as well as the different careers associated with this field.”

Show the 11-minute virtual industry tour (contains all three businesses) to the class. <https://bit.ly/NECTEITTour>. Students may individually view the videos online as well. Ask students to complete the student guide worksheet as they learn about the career cluster.

Also recommended: visit the <https://bit.ly/NECTEITCluster> and review the <https://bit.ly/NECTEITAtAGlance>.

FOLLOW-UP QUESTIONS:



Ask these questions to students after they view the virtual industry tour. Questions can be given as journal questions or asked aloud. Questions can also be assigned individually or as groups.

1. What surprised you about this career cluster?

- Answers will vary.

2. What types of careers are included in this career cluster?

- Developer, tech support, systems analyst, computer programmer, facility engineer, finance, account manager, sales, advertising, software support.
- Other careers not mentioned in the video: Database administrator, desktop publisher, help desk specialist, instructional designer, technical writer, network administrator, network technician, PC support specialist, security administrator, computer software engineer, game programmer, operating systems designer, software applications architect, digital media specialist, graphic artist, multimedia producer, virtual reality specialist, web designer, computer science professor, computer forensic investigator, etc.

***Note to instructor:** This would be a good time to explain to the students that this career cluster can be divided into four programs of study including:*

- Information support and services
- Network systems
- Programming and software development
- Web and digital communications

3. What careers/jobs in this career cluster could be obtained immediately after high school graduation?

- Most jobs in this career cluster require some type of degree. Possibly tech support would be one job that could be obtained with a high school degree.
- Other examples: Help desk assistant, network technician, web designer

4. Where could you go to receive education/training for these careers?

- Answers will vary. Remind students that there are over 250 programs in Nebraska alone that offer education in this area.

5. MACC offers billing services for telecommunications companies across the United States. Why do companies pay MACC them to do the billing instead of just doing the task themselves?

- MACC specializes in this service that it provides to several other companies. MACC can hire individuals to complete this task and probably do this more efficiently.
- Telecommunications companies that hire MACC have probably found that it may be cheaper to pay MACC than more employees.
- In some cases, it may also be a challenge to find qualified employees for this position.

Note to instructor: Challenge the students to really think about this question. Ask them about services that they (or their parents) pay for that they could do themselves. This might include: salon services, carwashes or detailing, cleaning services, pet grooming, restaurants, etc. Ask the students to brainstorm a list of skills that they could use or services that they could offer that people might be willing to pay for. This is how businesses begin!

6. Why are new jobs being created in this career cluster?

- Information technology is one of the fastest growing career fields in the world. People are fascinated with electronics (computers, cell phones, iPads, Kindles, etc.) and will pay good money for those products. Society has also become accustomed to fast Internet, fast computers, good cell phone signal, and online banking.
- As we continue to demand faster and better services and products, IT businesses are finding ways to meet our needs and thus, creating new jobs.

7. The Yahoo video mentioned an apprenticeship. What is an apprenticeship? How does it differ from an internship? Why would it be valuable for someone to have one of these experiences?

- An apprenticeship is defined by Webster's Dictionary as "a period of undergoing practical instruction in one's job or career. Internship is listed as a synonym for apprenticeship.
- The two are very similar, if not the exact same. Internships are generally designed for current college students who are exploring several career fields.
- Individuals who are either not planning to attend college or have already graduated with a degree or certificate obtain apprenticeships.
- An apprentice will be learning side-by-side an expert in that job and gaining a structured set of skills and knowledge.
- Generally, an apprentice knows for certain that they will work in the career field of their apprenticeship.
- Both are very valuable. Internships provide real work experience, which is a great asset on a resume and allow an individual to find out if they would be a good fit for the career. Apprenticeships teach valuable work skills.

8. What skills should someone have to work in this career cluster?

- Answers will vary.

9. The average salary for a Nebraskan working in this career cluster is a little more than \$45,000. This is higher than some other career clusters. What factors might contribute to a higher average salary?

- Most jobs in this career cluster require a bachelor's degree; therefore, the starting salary is higher than some other career fields. Workers in this field are in high demand.

Note to instructor: This would be an effective time to start a discussion with students about living expenses. Most students do not have a realistic understanding of the expenses that they will be responsible for paying as an adult. Share with them about salaries, taxes, insurance, house payments, cell phone bills, car payment, electricity, cable TV, etc. Be sure to emphasize the importance of money management and budgeting at any level of income.

10. The Silicon Valley is an area in California that houses some of the world's biggest tech companies including Apple, Google, Microsoft and even Yahoo!. Why might Yahoo! have decided to build a data center in Nebraska?

- One can only speculate... One reason might be cost.
- Building a facility or buying a building in Nebraska would certainly cost less than the same facility in California because the overall cost of living is cheaper in Nebraska.
- This also means that employee wages are on average less in Nebraska compared to California (but, again, the cost of living is less). Yahoo! could save money by operating the facility in Nebraska.
- Another reason could be good old-fashioned Midwestern values. The Midwest is home to great people with good work ethics.
- A third reason could be that Nebraska is centrally located in the United States.

11. Core academic skills include reading, written communication, listening, speaking, and scientific and mathematical reasoning (with problem solving). How might these core academic skills be used in this career cluster?

- Answers will vary.
- Here are a few examples:
 - Tech and software support representatives must have excellent written and verbal communication in order to communicate with customers and help fix their problems.
 - Developers will use problem solving to create new enhancements and upgrades that improve software.
 - Hudl uses mathematics in their video analysis that indicates tendencies and averages.
 - Sales representatives must be able to read and comprehend information about the tech products they are selling.

12. The virtual industry tour mentioned five traits that employers seek when hiring; what other personal traits and characteristics should a desirable applicant possess?

- Answers will vary.

EXTENDED
LEARNING
ACTIVITIES:



The following are suggested activities that will increase student learning and exposure to this career cluster.

- Explore the website of each of these businesses. Report to the class about components found on the website. Be sure to look for employment opportunities.
- Select a career that could be obtained in this career cluster. Research the career and present information to the class in the form of an oral presentation, poster, PowerPoint, iMovie, Prezi presentation, etc. Information to find includes: Salary, education required, typical day schedule, positive aspects of the job, negative aspects of the job, etc.
- Make a list of personal skills/behaviors that are strengths. Also make a list of present personal skills that should be strengthened in order to obtain a desired career.
- Complete a mock job application.
- Construct a resume for a specific career in this career cluster.
- Participate in a mock job interview.
- Meet with school counselor to discuss high school classes that would help prepare a student for careers in this career cluster. Also, discuss certifications that can be obtained during high school.
- Identify a post-secondary institution that offers certification or degrees that could be utilized in this career cluster. Obtain and complete admissions and scholarship applications for the school or program.

THERE ARE MANY RESOURCES THAT CAN BE USED BY TEACHERS, PARENTS AND JOB SEEKERS FOR CAREER EXPLORATION.

Some resources are tailored for Nebraska and some are national, but all provide valuable information and many incorporate information from the Nebraska Department of Labor Market Information (LMI). This list is not comprehensive, and only represents a sampling of the many resources available. Share the Career Exploration/ Planning resources table with students and have them do a review of what each offers them as a tool for finding the right career fit. Nebraska Career Connections is a totally FREE resource that is highly recommended for use by career and technical education students and teachers.

CAREER EXPLORATION & PLANNING		
Website	Type of Resources Available	Produced & Sponsored By
Nebraska Career Connections www.nebraskacareerconnections.org	Education and career planning resources for students, parents, educators, adults and employers. Students can explore career options, search for colleges, find out about applying for college, tuition, scholarships & financial aid, and create an e-portfolio and resume.	Nebraska Departments of Education and Labor, Nebraska VR, and Partnerships for Innovation.
Nebraska H3 Reports: https://bit.ly/neH3	Information on High Wage, High Demand, High Skill jobs in Nebraska. Top H3 occupations are identified on the home page. Reports can be generated by each Nebraska Economic Development Region and also statewide. Reports include H3 Report, Nebraska Economic Industry Report and All Career Clusters Report, Jobs can be searched by Job Title or SOC Code.	Nebraska Departments of Education, Labor and Economic Development
O*NET OnLine www.onetonline.org	Occupation information: knowledge, skills, abilities, Career Interest profile, job outlook and wages	U.S. Department of Labor, Employment and Training Administration (sponsor) Developed by the National Center for O*NET Development
My Next Move www.mynextmove.org/	Condensed version of information from O*NET OnLine	
Occupational Outlook Handbook www.bls.gov/ooh/	Nationwide data on occupation pay, work environment, job outlook, similar occupations, and more	Bureau of Labor Statistics
Nebraska Reality Check https://www.education.ne.gov/nce/career-readiness-videos/	Lifestyle cost information and occupations in corresponding wage range	Nebraska Department of Education

IN-DEPTH		
Website	Type of Resources Available	Produced & Sponsored By
CareerOneStop www.careeronestop.org	Variety of resources related to career planning, job training, and job searches	U.S. Department of Labor, Employment and Training Administration (sponsor)
GetMyFuture (section of the CareerOneStop website) www.careeronestop.org/GetMyFuture	IResources tailored to students and young adults such as career exploration, information on finding education and training programs, and how to conduct a successful job search.	U.S. Department of Labor, Employment and Training Administration (sponsor)

1. Description of Information Technology career cluster (from website):

Design, development, support, and management of hardware, software, multimedia, and systems integration systems.

Instructions: Questions 2 and 3 should be answered by watching all three sections of the virtual industry tour. www.necareertours.com

2. List eight careers mentioned during the virtual industry tour:

- | | |
|---------------------------|-------------------------------|
| 1. Systems analyst | 5. Facilities engineer |
| 2. Tech support | 6. Finance |
| 3. Developer | 7. Account manager |
| 4. Programmer | 8. Sales |

Advertising, Software support representative

3. List five career readiness skills employers want employees to use everyday on the job:

1. **Problem solver**
2. **Able to finish the job**
3. **Teamwork**
4. **Smart – able to learn**
5. **Personal responsibility**

Instructions: The following questions are specific to the MACC (Mid-America Computer Corporation) section.

4. Where is MACC based? Blair

5. Describe what MACC does:

MACC is an information technology company that produces software and billing services for telecommunications companies nationwide.

6. How many people are employed at MACC? 200

7. How many new I.T. jobs will be created in the next few years? 7,350

8. How many educational programs are offered in Nebraska in the Information Technology career cluster? 250+

9. What is the average salary for a Nebraskan working in this career cluster?
\$45,923

Instructions: The following questions are specific to the Yahoo! section.

10. Where is the Yahoo! data center located? Omaha

11. How many people does Yahoo! employ at this facility? 250

12. What percent of jobs in the Information Technology career cluster require an education ABOVE the high school level? 75%

Instructions: The following questions are specific to the Hudl section.

13. Where is Hudl located? Lincoln

14. One characteristic that Hudl looks for during the interview process is “culture fit.” Describe what this means:

Hudl values that they have a family atmosphere that allows employees to work and have fun at the same time. They want employees that fit well into this “family” business.

15. Describe what Hudl does:

Provides a unique service for coaches and players through video analysis. They use technology to find tendencies and use this knowledge to help train players.

16. To work for Hudl, a person must have a minimum of what type of degree?
Bachelor's Degree



ABOUT THIS PROJECT

The virtual industry tours provide a unique opportunity for students, parents and job-seekers to experience Nebraska-based industries without leaving the home or classroom.

The videos showcase different businesses and industries in each of the sixteen Career Clusters plus Entrepreneurship in the Nebraska Career Education Model. In addition to the tour of the business or industry, the videos also contain interviews with employees and managers discussing work requirements, education levels, salary and job prospects. The videos provide an accurate picture of today's workplace, breaking down stereotypes and assumptions while emphasizing the knowledge and skills required to be successful.

The teacher and student guides are designed to enhance student learning for each virtual tour. For the students, a guided notes worksheet is included to help them record important information about the career cluster. The teacher's guide includes a lesson plan complete with anticipatory set, introductory questions, and discussion questions to follow the virtual tours.

Discussion Guides and Career Readiness Resources are available at:
WWW.NEBRASKACAREERCLUSTERS.COM/RESOURCES



It is the policy of the Nebraska Department of Education not to discriminate on the basis of sex, disability, race, color, religion, marital status, age, national origin, or genetic information in its educational programs, admission policies, employment, or other agency programs.

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